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Instructions for use

A NEW GENUS FOR RECEPTION OF THREE  
AMERICAN SCALE INSECTS HITHERTO  
REFERRED TO DUPLACHIONASPIS  
(HOMOPTERA : COCCOIDEA)

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Not only many Old World species of scale insects but also four American ones, *spartinae*, *distichlii*, *litoralis* and *boquetensis*, have been referred to the genus *Duplachionaspis*. Ferris (1937) and Balachowsky (1954) have, however, some doubts in regard to the generic placement of the American species. Recently, through the kindness of Dr. R. F. Wilkey, I have had the opportunity to examine authentic specimens of these species. After my careful examinations I have come to the conclusion that a new genus should be established for reception of three of them: *spartinae*, *distichlii* and *litoralis*.

***Haliaspis***, gen. nov.

Type-species: *Chionaspis spartinae* Comstock.

Adult female elongate, fusiform. Median lobes parallel, set close, not zygotic, without gland spines between them. Second lobes bilobed. Marginal or both marginal and sub-marginal setae on ventrum of pygidium enlarged. Dorsal ducts forming segmental rows, present posteriorly to sixth or seventh abdominal segment. Marginal gland spines of pygidium arranged in pairs. Anal opening located about middle of pygidium or somewhat towards base of pygidium. Perivulvar pores in five groups. First stage exuvium with head distinctly concave and antennae five-segmented and shortened.

In general appearance of the adult female this genus much resembles *Duplachionaspis*, but is distinguishable by having enlarged setae on the ventrum of the pygidium. The new genus is also peculiar in the first stage exuvium of which the head is deeply invaginated and the antennae are much shortened.\*

This genus seems to be halophilous: so far as known the members of the genus all live on the beach. As for *spartinae*, for example, Comstock (1883) writes: "The insects were on plants growing so that at high tide they were commonly submerged in pure salt

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\* Ferris (1937) illustrates the cephalic region of the first stage exuvium of the three species referred to the new genus. I have examined only one example of the first stage exuvium of *distichlii*. In this exuvium the head is concave, but not so deeply as Ferris illustrates; I can find out no reason for this disagreement. On account of the antennae shortened, however, it agrees well with Ferris' illustration.

water nearly up to the insects, which when collected were drenched with salt spray."

***Haliaspis spartinae*** (Comstock)

*Chionaspis spartinae* Comstock, Cornell Univ. Agr. Expt. Sta., Dept. Ent. Rpt. 2: 106, 1883.

*Chionaspis spartinae*: Ferris, Stanford Univ. Pubs., Univ. Ser., Biol. Sci. 1: 44, 1920.

*Duplachionaspis spartinae*: Ferris, Atlas Scale Ins. N. Amer. SI-48, 1937.

In this species several dorsal macroducts occur in the submarginal region on the sixth abdominal segment and also one or two on the seventh just laterocaudad of the anal opening. Both marginal and submarginal setae on the ventral surface of the pygidium are remarkably enlarged not only in the thickness of the setae themselves but also in the size of their alveoli (Fig. 1).

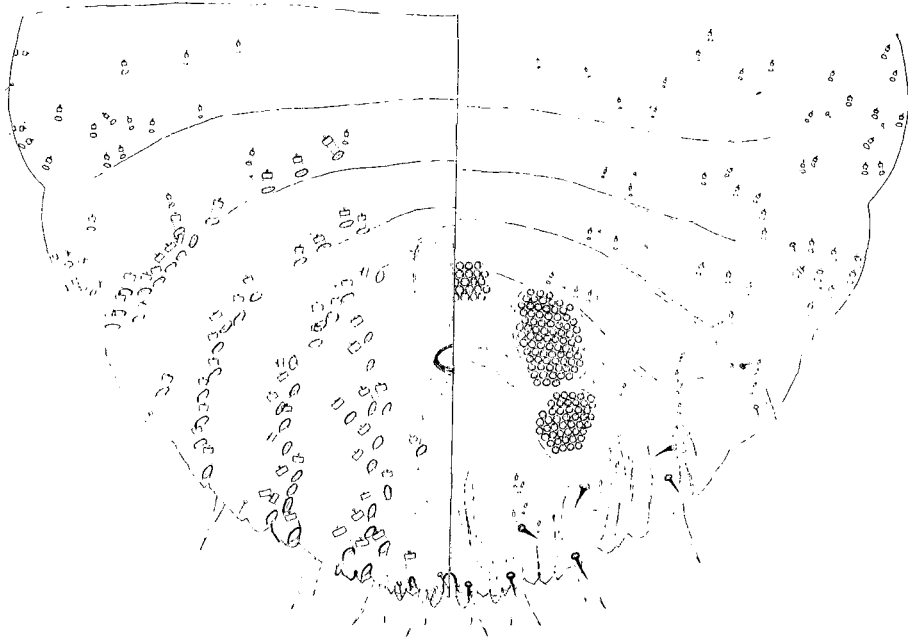


Fig. 1. *Haliaspis spartinae* (Comstock).  
Adult female: pygidium.

Specimens examined: 2 adult females & 2 second exuvia, Point Isabel, Texas, ex *Spartina* (1921, G. F. Ferris); 1 adult female, Russ Island, California, ex *Spartina stricta* (July 21, 1953, H. H. Keifer).

Distribution: U. S. A. (Massachusetts; California; Texas).

Host plants: *Spartina stricta*.

***Haliaspis distichlii*** (Ferris)

*Chionaspis distichlii* Ferris, Stanford Univ. Pubs., Univ. Ser., Biol. Sci. 1: 109, 1921.

*Duplachionaspis distichlii*: Ferris, Atlas Scale Ins. N. Amer. SI-46, 1937.

This species is usually provided with dorsal macroducts in the submarginal region of the sixth abdominal segment and also with one or two on the seventh laterocaudad of the anal opening. Both marginal and submarginal ventral setae of the pygidium are remarkably

enlarged like *spartinae* (Fig. 2, A). This species is peculiar by the fact that the enlarged marginal setae are removed from the normal position into the submarginal region. I have no doubt that this species belongs to *Haliaspis*.

Specimens examined: 6 adult females, 2 second exuvia & 1 first exuvium, prepared from type material, La Rivera, Baja California, Mexico, ex *Distichlis spicata* (July, 1919, G. F. Ferris).

Distribution: Mexico (Baja California).

Host plants: *Distichlis spicata*.

***Haliaspis litoralis* (Ferris)**

*Duplachionaspis litoralis* Ferris, Atlas Scale Ins. N. Amer. SI-47, 1937.

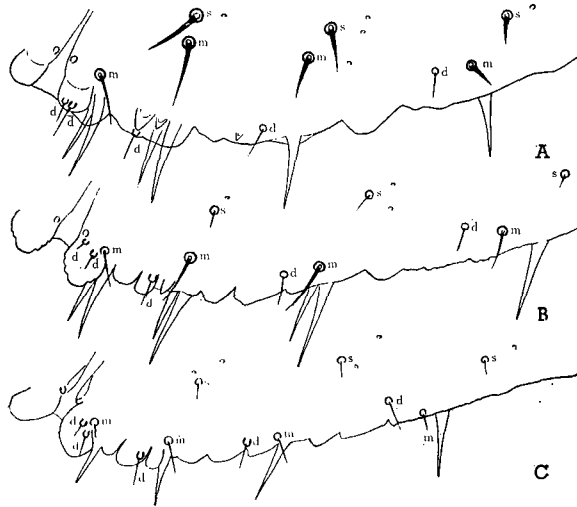


Fig. 2. Pygidial margins showing marginal (m) and submarginal (s) setae on the ventral surface and marginal setae on the dorsal surface (d).

A, *Haliaspis distichlii* (Ferris); B, *Haliaspis litoralis* (Ferris); C, *Duplachionaspis boquetensis* (Ferris).

This species differs remarkably from the preceding two by lacking dorsal macroducts in the submarginal region of the sixth abdominal segment and on the seventh. However, the enlargement of pygidial setae takes place in this species, although in the marginal setae alone and in a less degree, and the median lobes are not divergent but parallel (Fig. 2, B). According to Ferris (1937), this species is the same with *spartinae* and *distichlii* in the character of the first stage exuvium. I am much inclined to the opinion that *litoralis* should also be referred to *Haliaspis*.

Specimens examined: 2 adult females & 2 second exuvia, prepared from type material, Corpus Christi, Texas, ex *Monanthochloe litoralis* (1921, G. F. Ferris).

Distribution: U. S. A. (Texas).

Host plants: *Monanthochloe litoralis*; *Sporobolus wrightii*.

***Duplachionaspis* MacGillivray**

*Duplachionaspis* MacGillivray, The Coccidae: 307, 1921.

Type-species: *Chionaspis graminis* Green, lives in Ceylon.

Many species of this genus have been known to occur in the Old World. It is open to doubt whether real members of *Duplachionaspis* are native to the New World or not. The rest of the four American species, *boquetensis*, is retained tentatively in this genus, since I have found no particular character to exclude it from the genus.

***Duplachionaspis boquetensis* Ferris**

*Duplachionaspis boquetensis* Ferris, Atlas Scale Ins. N. Amer. SIII-281, 1941.

This species lacks dorsal macroducts in the submarginal region of the sixth abdominal segment and on the seventh. Its pygidial setae are all normal in size, with no trace of enlargement of any of them. The median lobes are apparently divergent (Fig. 2, C). I have examined two examples of the exuvium of the first stage: the head is almost straight or but faintly concave between the antennae; the antennae are five-segmented, and normal in shape, being not especially shortened. As well as most Old World species of *Duplachionaspis* this species is not particular in habitat, being found "on the plateau known as the Salto, at Boquete" (after Ferris, 1941).

Specimens examined: 4 adult females, 3 second exuvia & 2 first exuvia, prepared from type material, Boquete, Panama, host undetermined (1938, G. F. Ferris).

Distribution: Panama.

Host plants: "a small, low, perennial grass" (after Ferris, 1941).

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